

Certification Programs for Electronic Scrap Recycling



The trade association of the scrap
processing and recycling industry.

Overview

- Industry Background
- Principal ISRI Policies
- Recycling Industry Operating Standard (RIOS)



Over 100 Years of Scrap Recycling Experience



In 2006 we processed over 150 million tons of recyclables worth well over \$65 billion.

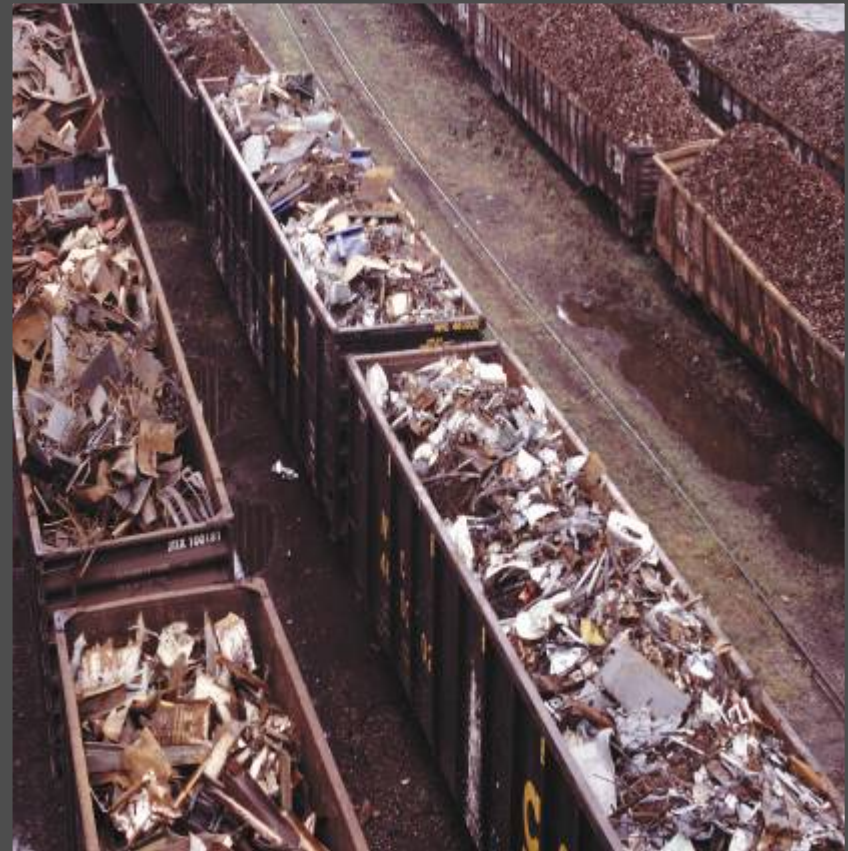
Manufacture, Broker & Consume

Over 1,500 member companies, 3000+ facilities that manufacture, broker & consume scrap metals, paper, plastics, glass, textiles, electronics and rubber.



Industrial Commodities

- 81 million tons of iron and steel
- 4.5 million tons of aluminum
- 1.8 million tons of copper
- 1.4 million tons of lead
- 1.4 million tons of stainless steel



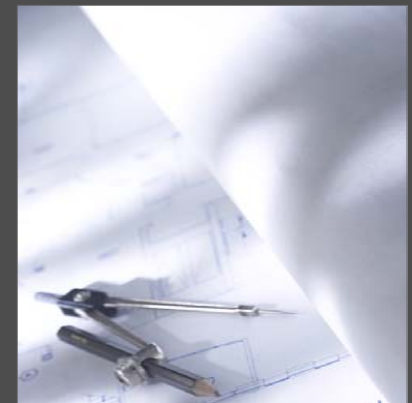
Industrial Grade Commodities

- 52 million tons of scrap paper
- 3.5 million tons of scrap glass
- 111 million scrap tires
- 957,500 tons of scrap plastic
- 1 million tons of e-scrap
- **Total 150 million tons**



Principal ISRI Policies

- Electronics Recycling
- Free & Fair Trade
- Congressional Recycling Caucus
- Design for Recycling
- RIOS: Environment, Health & Safety, and Quality



Voice of the Scrap *Electronics* Recycling Industry

- Electronics Recycling Council
- Over 350 Current Members that Handle Electronic Scrap
- Electronic Recycling Policy Statement
- Electronic Recycling Specifications
- Recycling Industry Operating Standard (RIOS)



Free & Fair Trade

“ISRI firmly believes in free and fair trade...We have good years and we have bad years, but we strongly believe in the free market system.”

— Robin Wiener, May 2004, testifying before the Bureau of Industry and Security, United States Department of Commerce



Global Scrap Commodity Markets*

* List prioritized by value of all scrap exports.

1. China	21. Greece	40. Brazil	59. Lebanon	78. Cote d'Ivoire
2. Canada	22. Sweden	41. Israel	60. Netherlands	79. Sri Lanka
3. Korea	23. Netherlands	42. Costa Rica	61. Senegal	80. Hungary
4. Mexico	24. Egypt	43. Argentina	62. Ireland	81. Estonia
5. Germany	25. Saudi Arabia	44. United Arab Emirates	63. Togo	82. New Zealand
6. Turkey	26. Bangladesh	45. Slovak Republic	64. Niger	83. Kuwait
7. UK	27. Columbia	46. Panama	65. Guinea	84. Tunisia
8. Taiwan	28. Singapore	47. Dominican Republic	66. Russia	85. Liberia
9. Japan	29. Australia	48. Portugal	67. Ghana	86. Azerbaijan
10. India	30. Pakistan	49. Nigeria	68. Angola	87. Oman
11. Hong Kong	31. Kenya	50. South Africa	69. Romania	88. Czech Republic
13. Malaysia	32. Peru	51. Honduras	70. Uruguay	89. Suriname
14. Thailand	33. Philippines	52. Trinidad & Tobago	71. Cambodia	90. Belize
15. Belgium	34. France	53. Bahamas	72. Jordan	91. Sierra Leone
16. Switzerland	35. Chile	54. Poland	73. Bulgaria	92. Benin
17. Indonesia	36. Austria	55. Jamaica	74. Aruba	93. Guyana
18. Egypt	37. Guatemala	56. Kazakhstan	75. Norway	94. Ukraine
19. Finland	38. El Salvador	57. Ecuador	76. Tanzania	95. Bermuda
20. Spain	39. Venezuela	58. Nicaragua	77. Gambia	96. Paraguay

Top 20 countries represent 96% of the market.

North & Central America

All Scrap by Value 2006

1. Canada	\$ 2.35B
2. Mexico	\$ 718M
3. Guatemala	\$ 16.3M
4. El Salvador	\$ 15M
5. Costa Rica	\$ 6.8M
6. Panama	\$ 6.3M
7. Dom. Rep.	\$ 6.3M
8. Honduras	\$ 3.6M
9. Trin. & Tob	\$ 3.2M
10. Bahamas	\$ 3M
Total	\$ 3.5B



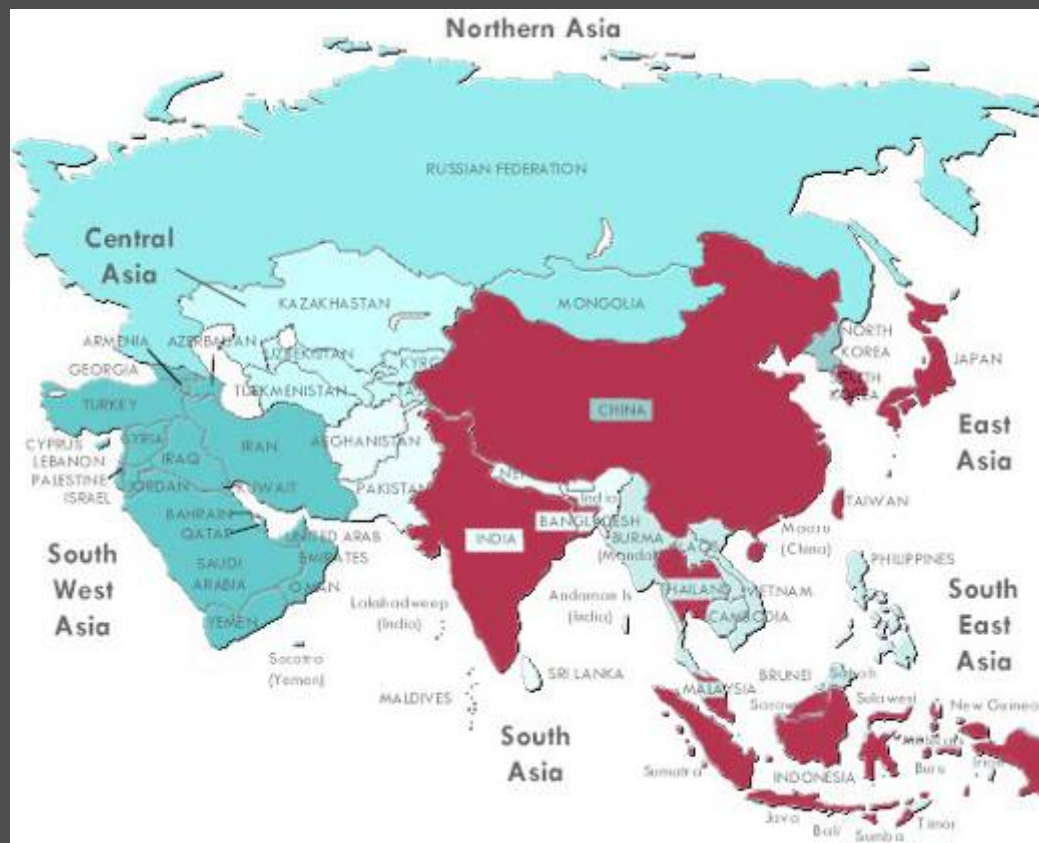
- **Non-Ferrous Metal 66%**
- **Ferrous Metal 16%**
- **Scrap Paper 15%**

- **Plastic 2%**
- **Rubber 1%**
- **Glass & Textile 1%**

Asia & Southeast Asia

All Scrap by Value 2006

1. China	\$ 6.5B
2. South Korea	\$ 787M
3. Taiwan	\$ 570M
4. Japan	\$ 500M
5. India	\$ 347M
6. Hong Kong	\$ 292M
7. Malaysia	\$ 210M
8. Thailand	\$ 175M
9. Indonesia	\$ 110M
10. Bangladesh	\$ 327T
Total	\$ 10.1B



- Non-Ferrous Metal 59%
- Ferrous Metal 23%
- Scrap Paper 16%

- Plastic 1.7%
- Rubber .1%
- Glass & Textile .1%

Europe

All Scrap by Value 2006

1. Germany	\$ 634M
2. Turkey	\$ 572M
3. UK	\$ 571M
4. Italy	\$ 282M
5. Belgium	\$ 150M
6. Switzerland	\$ 123M
7. Finland	\$ 80M
8. Spain	\$ 57M
9. Greece	\$ 53M
10. Sweden	\$ 43M
Total	\$2.56B



- **Non-Ferrous Metal 90.4%**
- **Ferrous Metal 5.3%**
- **Scrap Paper 3%**

- **Plastic 3%**
- **Rubber .4%**
- **Glass & Textile .7%**

South America

All Scrap by Value 2006

1. Colombia	\$ 27.6M
2. Peru	\$ 20M
3. Chile	\$ 17M
4. Venezuela	\$ 12.4M
5. Brazil	\$ 11.5M
6. Argentina	\$ 6.5M
7. Ecuador	\$ 2M
8. Uruguay	\$ 590T
9. Paraguay	\$150T
10. Bolivia	\$ 100T
Total	\$ 97.6M

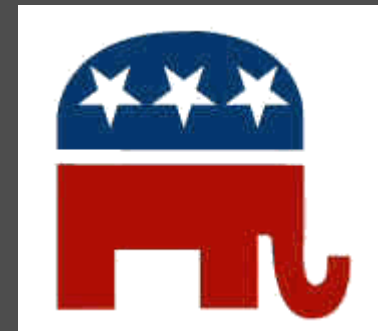


- Non-Ferrous Metal 5%
- Ferrous Metal 34%
- Scrap Paper 44%

- Plastic 5%
- Rubber 1%
- Glass & Textile 11%

U.S. Congressional Recycling Caucus

The Congressional Recycling Caucus seeks to establish a vibrant, robust, bi-partisan Caucus that represents the recycling industry and creates a permanent, long-term way to educate legislators and promote recycling in the United States.



U.S. Senate Recycling Caucus (23)

Co-Chairs

Tom Carper (D - Delaware)

Olympia Snowe (R - Maine)

Members

Max Baucus (D - Montana)

Richard Burr (R - North Carolina)

John Cornyn (R - Texas)

Pete Domenici (R - New Mexico)

Johnny Isakson (R - Georgia)

Frank Lautenberg (D - New Jersey)

Blanche Lincoln (D - Arkansas)

Mark Pryor (D - Arkansas)

Chuck Schumer (D - New York)

Arlen Specter (R - Pennsylvania)

Ron Wyden (D - Oregon)

Barbara Boxer (D - California)

Saxby Chambliss (R - Georgia)

Jim DeMint (R - South Carolina)

Chuck Grassley (R - Iowa)

John Kerry (D - Massachusetts)

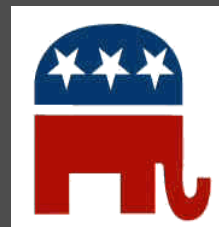
Joe Lieberman (I - Connecticut)

Robert Menendez (D - New Jersey)

Ken Salazar (D - Colorado)

Gordon Smith (R - Oregon)

Debbie Stabenow (D - Michigan)



U.S. House Recycling Caucus (109)

Co-Chairs

Frank Pallone (D - New Jersey)

John Shimkus (R-Illinois)

Members

Robert Alderholt (R-Alabama)

Spencer Bachus (R - Alabama)

Gresham Barrett (R - South Carolina)

Shelley Berkley (D - Nevada)

Tim Bishop (D - New York)

Leonard Boswell (D - Iowa)

Russ Carnahan (D - Missouri)

Tom Cole (R - Oklahoma)

Bud Cramer (D - Alabama)

Norm Dicks (D - Washington)

Chet Edwards (D - Texas)

Phil English (R - Pennsylvania)

Virginia Foxx (R - North Carolina)

Alcee Hastings (D - Florida)

Brian Higgins (D - New York)

Darlene Hooley (D - Oregon)

Rob Andrews (D - New Jersey)

Richard Baker (R - Louisiana)

John Barrow (D - Georgia)

Judy Biggert (R - Illinois)

Marsha Blackburn (R - Tennessee)

Michael Burgess (R - Texas)

Steven Chabot (R - Ohio)

Michael Conaway (R - Texas)

Lincoln Davis (D - Tennessee)

Lloyd Doggett (D - Texas)

Vernon Ehlers (R - Michigan)

Anna Eshoo (D - California)

Jim Gerlach (R - Pennsylvania)

Kristen Gillibrand (D - New York)

Maurice Hinchey (D - New York)

Bob Inglis (R - South Carolina)

Michael Arcuri (D - New York)

Brian Baird (D - Washington)

Melissa Bean (D - Illinois)

Rob Bishop (R - Utah)

Earl Blumenauer (D - Oregon)

Lois Capps (D - California)

Ben Chandler (D - Kentucky)

Jim Cooper (D - Tennessee)

Diane DeGette (D - Colorado)

Mike Doyle (D - Pennsylvania)

Brad Ellsworth (D - Indiana)

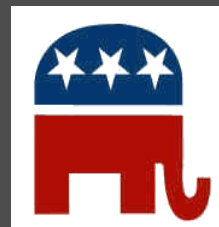
Chaka Fattah (D - Pennsylvania)

Gabrielle Giffords (D - Arizona)

Gene Green (D - Texas)

Rush Holt (D - New Jersey)

Jay Inslee (D - Washington)



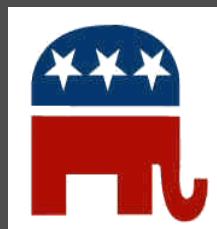
U.S. House Recycling Caucus (109)

House Members (Cont.)

Sheila Jackson-Lee (D - Texas)
Rick Larsen (D - Washington)
Ron Lewis (R - Kentucky)
Thaddeus McCotter (R - Michigan)
Jim Marshall (D - Georgia)
George Miller (D - California)
Marilyn Musgrave (R - Colorado)
James Oberstar (D - Minnesota)
Tom Petri (Wisconsin)
George Radanovich (R - California)
Mike Ross (D - Arkansas)
Heath Schuler (D - North Carolina)
John Shimkus (R - Illinois)
Louise Slaughter (D - New York)
John Spratt (D - South Carolina)
Patrick Tiberi (R - Ohio)
Chris Van Hollen (D - Maryland)
Debbie W.-Schultz (D - Florida)
Robert Wexler (D - Florida)

James Langevin (D - Rhode Island)
Steven LaTourette (R - Ohio)
Daniel Lipinski (D - Illinois)
Jim McDermott (D - Washington)
Jim Matheson (D - Utah)
Jim Moran (D - Virginia)
Grace Napolitano (D - California)
John Olver (D - Massachusetts)
Joe Pitts (R - Pennsylvania)
Mike Rogers (R - Michigan)
Ed Royce (R - California)
Allyson Schwartz (D - Pennsylvania)
Bill Shuster (R - Pennsylvania)
Adam Smith (D - Washington)
Cliff Stearns (R - Florida)
Mark Udall (D - Colorado)
Pete Visclosky (D - Indiana)
Henry Waxman (D - California)
Roger Wicker (R - Mississippi)

Tom Lantos (D - California)
John Lewis (D - Georgia)
Frank LoBiondo (R - New Jersey)
Jerry McNermer (D - California)
Brad Miller (D - North Carolina)
Tim Murphy (R - Pennsylvania)
Eleanor H. Norton (D - Washington, D.C.)
John Peterson (R - Pennsylvania)
Todd Platts (R - Pennsylvania)
Peter Roskam (R - Illinois)
John Salazar (R - Colorado)
Chris Shays (R - Connecticut)
Albio Sires (D - New Jersey)
Hilda Solis (D - California)
Tom Tancredo (R - Colorado)
Gred Upton (R - Michigan)
Greg Walden (R - Oregon)
Jerry Weller (R - Illinois)
Heather Wilson (R - New Mexico)



Design for Recycling®



Developed in the early 1980's, DFR® is a voluntary program that encourages manufacturers to consider the end-of-life issues of their products at the design stage.

HP 2006 DFR Award

- to reduce the use of hazardous materials, to simplify component design, and to build computers for easy disassembly and recycling.

What is RIOS?

- ISRI's effort to take the industry to new heights.
- A voluntary, comprehensive environment, health & safety and quality management system that integrates ISO 14001, ISO 9001 & OSHAS 18001.
- Funded by 50 charter ISRI member companies that encompass more than 100 scrap recycling facilities



RIOS Benefits

- Improves environmental performance.
- Improves safety performance.
- Improves relations with community, and reduces need for regulation.
- Increases efficiency, consistency, and productivity of facility operations.
- Enables consistent quality.
- Reduces operating and insurance costs.



How is RIOS structured?

As purchased, RIOS comes in two parts:

- the Standard itself (RIOS)
- the Implementation Package (RIOS IP)



The six key components of RIOS

1. General Requirements
2. Policy
3. Planning
4. Implementation
5. Checking and Corrective Action
6. Management

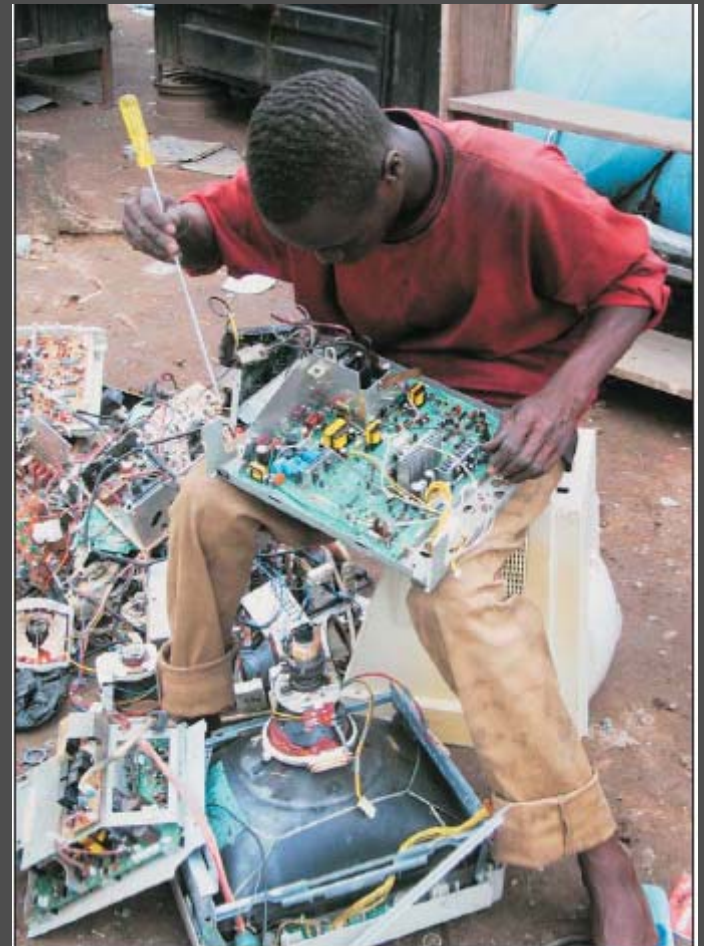


- These elements were drawn from ISO 9001, ISO 14001, and OHSAS 18001.
- RIOS includes a glossary of terms and an annex.
- This annex shows in table form the correspondence between RIOS and the three standards noted above.

Environmental Impacts and Health & Safety Risks



RIOS member companies shall establish (a) process(es) to identify the actual and potential environmental impacts and health & safety risks of their activities, products, and services, considering both routine and non-routine activities (including emergencies).

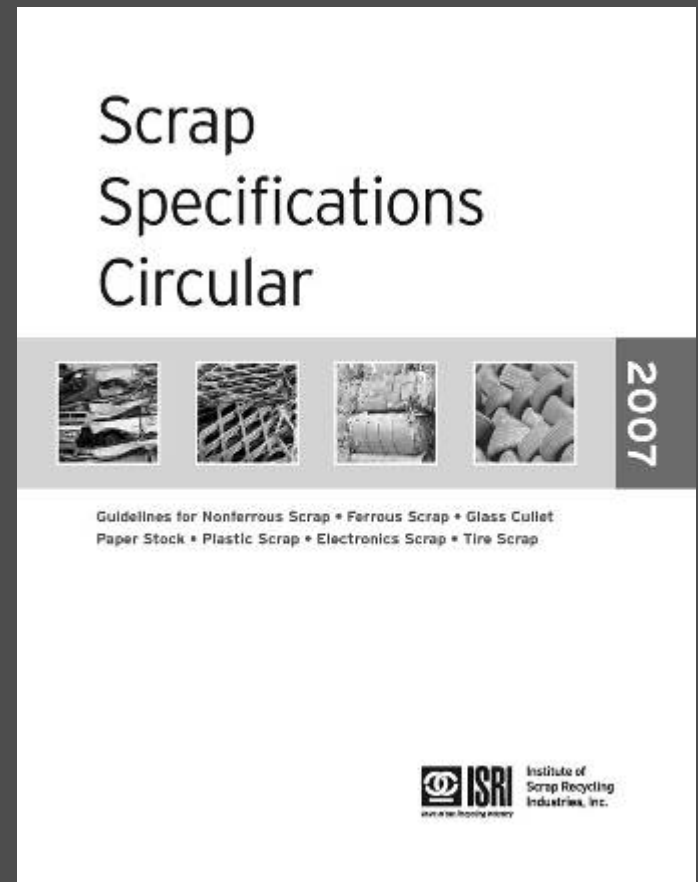


RIOS IP

- The centerpiece is the “Master Tool.”
 - A “toolbox” of checklists, action items, and tracking forms.
- The Master Tool first leads you through a checklist of QEH&S issues for each operation in your facility, such as baling, shredding, and sorting.
- The tool then helps you to determine what activities you must do to be compliant.



**ISRI Scrap Specifications
provide an industry-wide,
globally accepted set of
descriptions and guidelines
for industry grade scrap
commodities.**



Electronic Scrap Specifications

ESM 2 - Depot – Mixed Copper/Precious Metals

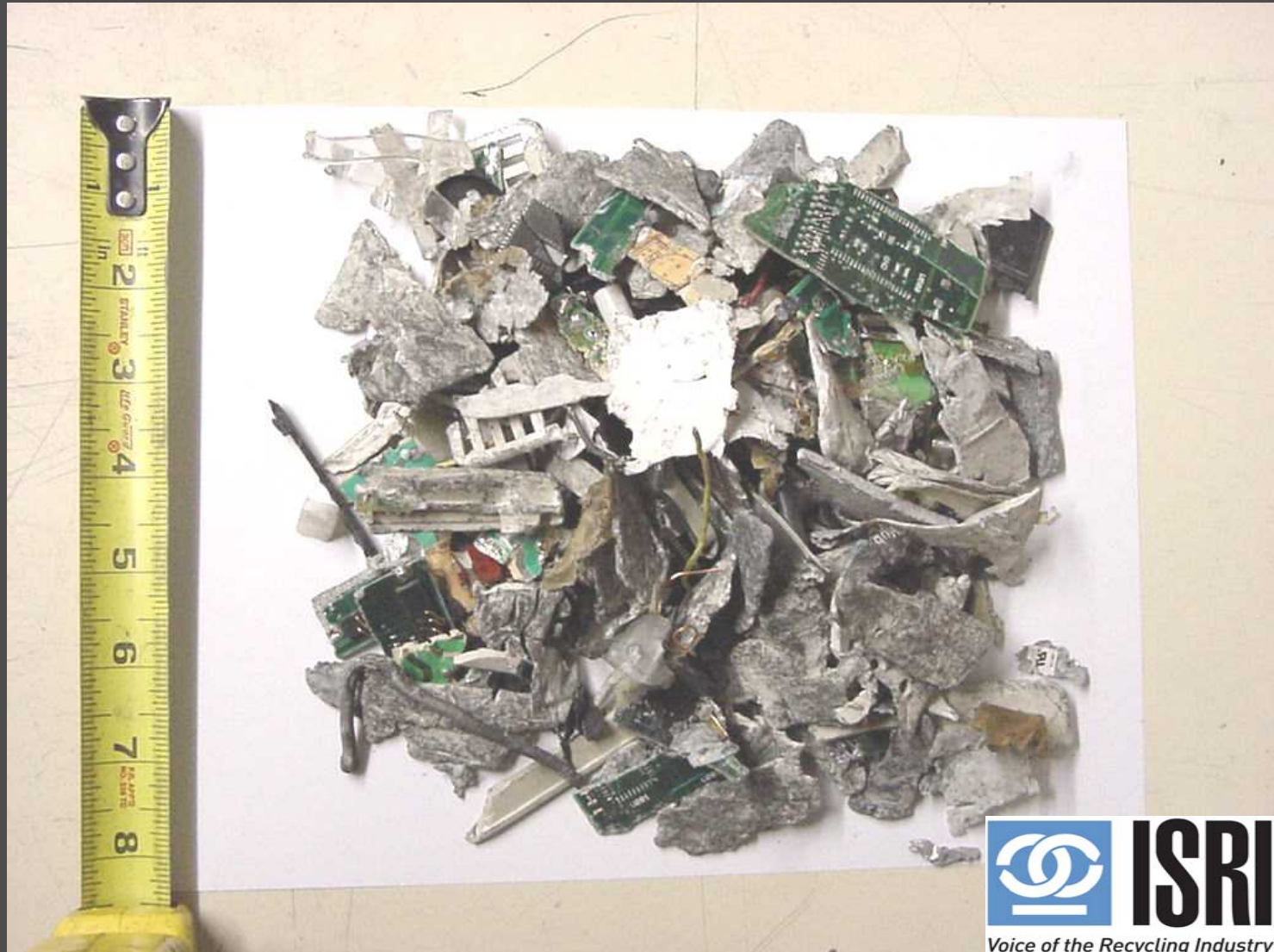
Material may contain printed circuit boards, ribbon cable, monitor yokes and other copper and /or precious metal bearing components.



ISRI ESM 3 Dallas Fines from Electronics Shredding (1-4 opt Gold typical)



ISRI ESM 4 Dallas 5 Coarse Mixed Plastic & Metal Fraction (<1 opt Gold)



How much does RIOS cost?

- An initial fee of \$1,000 to \$2,000 per yard and annual fee of about \$1,000 per yard.
- Other expenses could include consultant fees, auditor fees, and training costs, all of which will vary based on the needs and preferences of each implementing facility.
- Much less expensive than ISO





RIOS Auditing

“RIOS is expected to save recyclers time and money by improving product quality, reducing accidents, and improving regulatory compliance.”



**-ANSI-ASQ National
Accreditation Board
(ANAB)**

President Robert H. King

Joint Commission for Environmental Cooperation And U.S./Mexico Border 2012

**Eric Harris
Associate Counsel &
Director of Government and International Affairs**

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